ULTRAVIOLET CORONAL IMAGER – FIRSTS

UVCI IS:

- PROVIDING THE FIRST UV IMAGES OF THE FULL CORONA FOR TWO DIFFERENT ELEMENTS
- PROVIDING THE FIRST GLOBAL MAPS OF SOLAR WIND OUTFLOW
- PROVIDING THE FIRST IMAGES OF THE He II CORONAL EMISSION
- IMPROVING THE SPATIAL RESOLUTION OF CORONAL IMAGES BY AT LEAST A FACTOR 5
- ALLOWING THE FIRST VIEW OF THE CORONA OUT OF THE ECLIPTIC: A LIMB VIEW OF THE EQUATOR
- PROVIDING THE FIRST MEASUREMENTS OF GLOBAL CORONAL EXPANSION NEAR THE EQUATOR

ULTRAVIOLET CORONAL IMAGER – SCIENTIFIC GOALS

- To investigate the role of SMALL SCALE MAGNETIC RECONNECTION in the generation of solar wind and in the evolution of coronal mass ejections
- To determine the DIFFERENTIAL OUTFLOW SPEED of the major components (H , He) of the solar wind
- To discriminate the mechanisms for solar wind acceleration through DIFFERENT MASS–CHARGE ions observations
- To determine the ABUNDANCE of the major components (He, H) of the corona and solar wind
- To DISENTANGLE TIME–SPACE variations of the large–scale corona during corotation periods (the temporal evolution of any coronal feature appearing on the plane–of–the–sky at the limb can be followed for a long period)
- To determine the LONGITUDINAL GLOBAL STRUCTURE of the corona and coronal magnetic field and investigate its evolution at high time resolution by exploiting the out–of–ecliptic observations
- To investigate the LONGITUDINAL CORONAL EXPANSION and its diversification in high and slow speed wind streams (by observing the global outflow near the equator)
- To determine the longitudinal extension of the coronal mass ejections and infer their true extension in the ecliptic plane in order to quantify the IMPACT PROBABILITY of CME's on Earth